

4.3 HAZARDOUS MATERIALS

This section addresses the handling, storage, and disposal of hazardous materials and the potential for the proposed Project to release hazardous materials (i.e., chemical materials, such as petroleum products, solvents, pesticides, herbicides, paints, metals, asbestos, and otherwise regulated chemical materials) that could result from the construction and operation of primary Project components, including the construction and operation at the caissons of Pier 421-1 and 421-2. This analysis also briefly discusses area resources that could be affected by the operation of secondary Project components (existing facilities not proposed for modification) such as the operation of the EMT, particularly as related to accidental oil release. For a full discussion of such resources, see the Draft EMT EIR. Potential impacts resulting from releases of oil-related materials, such as contaminated sediment or a crude oil spill, also are analyzed in other sections of this Draft EIR in Section 4.5, Hydrology, Water Resources, and Water Quality. Section 4.2, Safety, evaluates the potential for upset conditions that could result in a release of oil and hazardous materials.

Potential impacts associated with a release of hazardous materials by the Project and potential alternatives are based on a change from existing conditions. Significance criteria are used to assess the significance of the impacts, and whether MMs can be applied to reduce the level of significance.

This section incorporates data from Santa Barbara County 01-ND-34 and city of Goleta 06-ND-001 along with follow up hazardous materials studies associated with those NDs. This section also incorporates by reference the conclusions of the EMT EIR regarding hazardous material releases and summarizes these conclusions where appropriate. Where this document relies upon MMs contained in the Draft EMT EIR to address Project impacts, these are summarized to permit report reviewers to understand their relationship to the Project.

4.3.1 Environmental Setting

The environmental setting presented in this section represents the baseline conditions existing at the time the NOP was released. The baseline conditions include the existing configuration of the Project site, existing operations, and present environment. Risks associated with a potential release of hazardous materials are then evaluated in relation to the baseline conditions.

Study Area Location and Description

The study area boundary for the proposed Project is described in Section 1.2.2; Study Area Boundary, for the hazardous materials analysis, the area of analysis included the immediate on-shore and near-shore areas of the Ellwood coast that would be subject to direct impacts from a release of hazardous materials. This area generally includes the existing PRC 421 facilities, access road, and tie-in at the existing EOF.

The study area includes, from southeast to northwest: Pier 421-2 (southeastern boundary), Pier 421-1 (approximately 325 feet northwest of Pier 421-2), a portion of the gravel access road (from Pier 421-2 extending northwestward, approximately 1,300 feet along the beach), and the remaining portion of the access road (to EOF [northwestern boundary] extending northwest, approximately 500 feet across the Sandpiper Golf Course). Each steel-pile pier contains sand-filled concrete caissons that are approximately 67 feet long and 42 feet wide. These portions of the study area are depicted on Figure 4.3-1 (shown in blue).

Baseline Conditions for Hazardous Materials Analysis

The baseline conditions are defined in Section 1.2.3, Definition of Baseline and Future Conditions. For the hazardous materials analysis, baseline conditions include the current configuration of Piers 421-1 and 421-2, infrastructure, access road, and no current oil production from PRC 421. Additionally, baseline conditions include any potential existing hazardous materials contamination within the study area boundary in soil, sediment, groundwater, or surface water.

Documentation of Existing Contamination within the Study Area Boundary

The potential for unknown historical releases of hazardous materials to the study area can be evaluated by reviewing historical records covering the study area and nearby properties. Such a review typically focuses on previous industrial or commercial uses of properties where use, handling, or storage of hazardous materials could be assumed. Given that oil and gas development has been prevalent in the area since the 1920s, debris and contamination associated with such development can be found in the Ellwood area. Further, it is known that the Project site has been used for oil and gas production since 1928 and it is likely that contamination from previous production activities is located onsite.

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FIGURE 4.3-1. HAZARDOUS MATERIALS BASELINE CONDITIONS

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Several environmental databases were reviewed during this analysis to evaluate the potential presence of a known historical release in the study area. The databases reviewed are listed in Table 4.3-1.

Table 4.3-1. Databases Reviewed for Hazardous Material Analysis

Federal Database	California Database
U.S. EPA Resource Conservation and Recovery Act (RCRA) hazardous waste generators	State of California Environmental Protection Agency (CalEPA) Cal-Sites Database (Cal-Sites)
RCRA Corrective Action Sites (CORRACTS) Treatment, Storage, and Disposal (TSD) facilities	State of California Department of Toxic Substances Control (DTSC) EnviroStor Database (ENVIROSTOR)
RCRA non-CORRACTS TSD facilities list	DTSC Hazardous Waste Tracking System (HWTS) Reports
Comprehensive Environmental Resource Conservation and Liability Information System (CERCLIS) listing	CalEPA Cortese Hazardous Waste and Substances Site List (Cortese)
CERCLIS No Further Remedial Action Plan (NFRAP)	SWRCB Underground Storage Tank Database (UST)
National Priority List (NPL)	SWRCB List of Historical UST Sites (HIST UST)
Delisted NPL	SWRCB GeoTracker Leaking UST List (LUST)
Emergency Response Notification System (ERNS) list	SWRCB Spills, Leaks, Investigations, and Cleanups List (SLIC)
	DTSC Deed Restriction Listing (DEED)
	DTSC Voluntary Cleanup Program Properties List (VCP)

Based on this review, the study area was listed on the following databases:

Federal RCRA Small Quantity Generator (SQG) database. RCRA SQGs are facilities that generate between 220 and 2,200 pounds (lbs) of hazardous waste per month, or in a one-month timeframe. The study area was listed as Handler identification: CAD981576846, and was last updated July 30, 1997. No additional information was noted on the listing with respect to dates, quantities, or types of hazardous materials.

Federal ERNS List through the National Response Center. The National Response Center provides all oil and chemical spill data reported to the Center since 1990. The study area was listed as Incident Report #741971 dated November 20, 2004, which indicates that a caller reported an unknown dark black sheen on ocean water at Pier 421-1. The reported size of the sheen was 50 feet by 3 feet. No other information on how the apparent release occurred, or how it was remediated, was reported.

DTSC Hazardous Waste Tracking System (HWTS). The HWTS generates reports on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities (TSDFs). The study area was listed on the HWTS as U.S. EPA identification: CAD981576846, under the name of Venoco, Inc., North American Industry Classification System 211111 and Standard Industrial Classification 1311. The status was shown to be active, and the record was entered April 10, 1987 (the facility was owned by ARCO at this time). The record entry in this database appears to be based solely on the study area's U.S. EPA identification number, which reflects the study area's inclusion on the Federal SQG database as described above.

Database Entries for Adjacent Properties

The EOF was also reported on several databases. The listings primarily consisted of small oil spills or releases of natural gas. The largest spill reported was 10 barrels crude oil to soil in 1995. The release apparently resulted from a valve crack at a storage tank. Additionally, the EOF was listed on the State Water Resources Control Board (SWRCB) GeoTracker database as a facility with underground storage tanks.

Additional Releases at the Project Site

March 1994 – A 6-inch pipeline leak occurred and resulted in a release to soil of approximately 170 barrels beneath the 12th green of the Sandpiper Golf Course near the coastal bluffs. This release impacted surface and subsurface soils at the golf course.

November 22, 2000 – An oil leak was induced during a routine fluid-level check at Pier 421-2, and an oil leak and sludge were noted in association with a storage tank in secondary containment on Pier 421-1. The sludge was tested by a hazardous waste bioassay technique, and was found to be toxic (note that determination of hazardous waste includes four characteristics: toxic, flammable, corrosive, or reactive, and that if a substance is found to be characteristic of one of the four types, then it is considered a hazardous substance, and subject to regulation under the RCRA). The toxic sludge and associated liquids were removed from the storage tank and disposed of properly. This leak apparently did not impact soil, sediment, groundwater, or surface water.

November 27, 2000 – An oil leak occurred during fluid-level check on Pier 421-2, and resulted in the release of approximately 15 gallons. The oil was contained in a drum in secondary containment. This leak apparently did not impact soil, sediment, groundwater, or surface water.

2001 – During emergency repairs to PRC 421 facilities, petroleum-hydrocarbon-contaminated sediment was encountered in three of the five holes dug across the width of Pier 421-2. The contaminated sediment was encountered at a depth of approximately 15 feet, and the contamination appeared to extend to approximately 20 feet below the surface of the top of the sediment. Laboratory testing of the contaminated sediment indicated the presence of several hundred to less than 2,000 ppm diesel- and lube-oil-range petroleum hydrocarbons. Approximately 143 tons of the contaminated sediment was excavated from the area near the holes completed for installation of soldier pile structural sections. The excavated material was transported to an asphalt recycling plant (Santa Barbara County 2001).

January 19, 2004 – A large section of the outer caisson wall of Pier 421-1 sheared off and fell into the surf below. Large pieces of concrete debris and rebar fell to the base of the caisson. Based on the long history of oil and gas production at both PRC 421 wells, it was assumed that fill and sediment inside the caissons at both piers are likely contaminated with petroleum-related constituents. Therefore, it was also noted that the 2004 caisson wall repair was conducted in part to prevent contaminated fill and sediment materials from being released.

During wall repair activities, two leaks were found in the old caisson wall. These leaks were reported by a member of the public, and may correspond to the Federal ERNS listing noted earlier in this section. The leaks were noted as containing both a lighter oily substance and a black tar-like substance, both of which were released to the ocean. The leaks from the wall continued for a period of time during the repair project, and were estimated to reach up to one quart per day. Absorbent pads and booms, and a topical sealant were used in an attempt to minimize the leaks, but those efforts appeared to be unsuccessful. Once the new caisson wall was constructed, concrete was poured between the new and old walls, which could provide a more effective seal for the leak areas on the old wall.

Following completion of the new caisson wall, samples of the leaking substance and a “shale mud/sand” were tested. The shale mud/sand sample included concentrations of total petroleum hydrocarbons (TPH) in the range of 100 to 200 milligrams per kilogram (mg/kg). Risk to human health or the environment cannot be quantified based on the analytical data obtained. However, concentrations in the 100 to 200 mg/kg range for TPH are well below 1,000 mg/kg, which is a commonly used screening value for TPH in soil and a generally accepted regulatory guideline.

The laboratory analysis of the leaking substance that was released from the old caisson wall was found to have a heavier API gravity than would be expected from the oil produced at PRC 421. PRC 421 wells are anticipated to have an API gravity of approximately 35, while the leaking substance was found to be much heavier at 17.8. Therefore, it was noted in the MND that the substance may not have originated from PRC 421. Alternately, the substance may have been PRC 421 reservoir oil that had partially volatilized or decomposed, resulting in a heavier API gravity. The source of the leaking fluid remains unknown (City of Goleta 2006a).

April 1, 2005 – A dark substance was found to be leaking from the east side of the old caisson wall at 421-1 during a CSLC inspection after completion of the caisson wall repair. During subsequent inspections, the leaking substance appeared, based on visual and olfactory evidence, to not be a petroleum release; no oily or slick texture was visible, and an anaerobic sulfurous odor was noted.

August 21, 2006 – Two slow leaks were reported on the east wall of the outer caisson by a member of the public. The area around the leak was described as whitish in color and smelled of sulfur. Energy staff sampled the fluid during a site visit in response to the reported chemical leak. The fluid did not appear to contain hydrocarbon material, and it remains unknown whether the leaks are related to the front caisson wall repair project activity (City of Goleta 2006).

Natural Seeps – Prolific natural hydrocarbon seepage occurs offshore of Coal Oil Point in the Santa Barbara Channel, just southeast of the Project site. The seeps emit both liquid and gaseous hydrocarbon phases, with gas predominating. Such hydrocarbon seepage affects ocean and beach sediment chemistry and provides a natural source of petroleum pollution. On a regional scale, the Coal Oil Point seeps represent a significant source of gaseous hydrocarbons and residual asphaltic hydrocarbons, or beach tar. The natural seeps are discussed further in Section 4.1, Geological Resources.

Study Area Receptors

For this analysis, receptors are located in areas in the vicinity of the study area that have the potential to be adversely affected by the release of hazardous materials as a result of implementation of the proposed Project or its Alternatives. Such receptors include human and ecological, including those in sensitive areas, such as wetlands, and surface waters of nearby creeks or the ocean. If a release of hazardous materials were to occur, the most likely receptors would be located within the study area or its

immediate vicinity. Those receptors could include occupants at the Sandpiper Golf Course, personnel at the EOF, beach recreational users, construction personnel, and ecological receptors associated with the upland and near-shore environments near the piers and the access road. Additional information on receptors and the environments in the vicinity of the study area are described in Section 4.2, Safety; Section 4.5, Hydrology, Water Resources, and Water Quality; Section 4.6, Marine Biological Resources; and Section 4.7, Terrestrial Biological Resources.

4.3.2 Regulatory Setting

Regulations applicable to the proposed Project are intended to regulate hazardous materials and hazardous wastes, as well as to manage sites contaminated by hazardous substances. These regulations also are designed to limit the risk of upset during the use, transport, handling, storage, and disposal of hazardous materials. The proposed Project would be subject to numerous Federal, State, and local laws and regulations including the following:

Federal

See Section 4.2, Safety, and Section 4.5, Hydrology, Water Quality, and Water Resources for summaries of additional laws addressing oil pollution.

- RCRA of 1976 (42 USC §§ 6901-6992k) enacted to protect the public from harm caused by waste disposal, to encourage reuse, reduction, and recycling, and to clean up spilled or improperly stored wastes;
- Hazardous and Solid Waste Act of 1984 Amendments to RCRA established national minimum design standards for municipal solid waste landfills and for regulated underground storage tanks containing hazardous substances and petroleum products; and
- Refuse Act of 1899 (33 USC 407) prohibits industrial discharges into bodies of water.

Department of Transportation (DOT) 49 CFR Part 195. Hazardous liquid pipelines are under the jurisdiction of the DOT and must follow the regulations in 49 CFR Part 195, *Transportation of Hazardous Liquids by Pipeline*, as authorized by the Hazardous Liquid Pipeline Safety Act of 1979 (49 CFR 2004). Other applicable Federal requirements are contained in 40 CFR Parts 109, 110, 112, 113, and 114, pertaining to the need for Oil SPCC Plans; 40 CFR Parts 109–114 promulgated in response to the OPA of 1990, as well as the OCS Lands Act. 49 CFR Part 195 also addresses pipeline integrity management plans.

NPDES Storm Water Permits associated with Construction and Industrial Activities. The Central Coast Regional Water Quality Control Board (RWQCB) oversees on-site treatment of “California Designated, Non-Hazardous Waste” and enforces water quality thresholds and standards set forth in the Basin Plan through the Project permitting process. The Central Coast RWQCB would require the Applicant to obtain a General Construction Activities Storm Water Permit under the NPDES program. The permit would require that the Applicant develop and adhere to a Storm Water Pollution Prevention Plan (SWPPP) including implementation of BMPs to control erosion, siltation, turbidity, and pollution of study area media by other potential contaminants typically associated with construction activities. The SWPPP also would include BMPs necessary to control or prevent the release of non-storm water discharges, such as crude oil, in storm water runoff. Additional information on storm water management is described in Section 4.5, Hydrology, Water Resources, and Water Quality.

State

The CSLC issues and administers oil and gas leases covering tide and submerged lands in accordance with the provisions of Division 6, Parts 1 and 2 of the California Public Resources Code (PRC). PRC section 6829 includes provisions for specifying methods of operation and standard requirements for conducting operations properly; the prevention of waste, the protection of the safety and health of the workers; and the liability of the lessee for personal injuries and property damage. Section 6829.2 includes provisions for the possible arresting or amelioration of land subsidence. PRC sections 6873.2 and 6873.5 include provisions for carrying out the requirements of the CEQA.

CSLC Regulations – State Lands Commission Oil and Gas Operations. CSLC MRMD Regulations are contained in the CCR Title 2, Div 3, Chapter 1, Articles 1 through 11. Articles most relevant to hazardous materials impacts are described below:

- Article 3 pertains to oil and gas leases, exploration permits, and operating requirements.
 - *Article 3.2 pertains to oil and gas drilling regulations.*
 - *Article 3.3 pertains to oil and gas production regulations* - This article pertains to oil and gas production operations on State oil and gas leases located on State tide and submerged lands under the jurisdiction of CSLC, and is applicable to operations conducted from mobile rigs, fixed offshore structures and upland locations serving these leases. Provisions in this

article include administrative prevention and elimination of any contamination or pollution of the ocean and tidelands, prevention of waste, for the protection of human health, regulations on wellhead equipment, subsurface safety valves, surface safety valves, remedial and well maintenance work, supervision and training, anomalous casing annulus pressure, subsurface injection, conversion of a well to fluid injection (requires prior approval of CSLC), waste disposal, pressure relief valves, personal protective equipment, and pipeline inspections.

- *Article 3.4 pertains to pollution control during oil and gas lease drilling and operations* - This article pertains to oil and gas drilling and production to operations on State oil and gas leases located on State tide and submerged lands under the jurisdiction of the CSLC, and is applicable to operations conducted from mobile rigs, fixed offshore structures and upland locations serving these leases. The article includes provisions for administration, prohibitions of pollution and contamination, suspension of operations and corrective action, disposal of drill cuttings and drilling muds, oil spill contingency plan requirements, pollution control and removal equipment, critical operations and curtailment plans, and pollution reports to the USCG and State Office of Emergency Services (OES) in Sacramento.

- *Article 3.5 pertains to disposal of royalty oil, gas, or other hydrocarbons.* This article sets forth the procedures whereby the CSLC may enter into agreements for the disposition and sale of oil, gas, or other hydrocarbons.

- *Article 3.6 pertains to operation manual and emergency planning* – This article includes requirements for operators to prepare an operations manual describing equipment and procedures which the operator employs or would employ to protect the public health and safety and the environment and to prevent oil spills.

State Oil and Gas Lease PRC 421 requires the lessee to comply with all valid laws of the United States and of the State of California, all valid ordinances of cities and counties applicable to the Lessee's operations, Division 3 and 6 of the Public Resources Code, and such rules and regulations as are, or may be issued pursuant thereto.

California Pipeline Safety Regulations - California Government Code sections 51010 through 51018. These sections provide specific safety requirements that are more stringent than the Federal rules. These include:

- Periodic hydrostatic testing of pipelines, with specific accuracy requirements on leak rate determination;
- Hydrostatic testing by State-certified independent pipeline testing firms;

- Pipeline leak detection; and
- Requirement that all leaks be reported.

Hazardous Material Release Response Plans and Inventory Law (California Health and Safety Code, Chapter 6.95). This law is designed to reduce the occurrence and severity of hazardous materials releases. This State law requires businesses to develop a Release Response Plan for hazardous materials emergencies if they handle more than 500 lbs, 55 gallons, or 200 cubic feet of hazardous materials. In addition, the business must prepare a Hazardous Materials Inventory of all hazardous materials stored or handled at the facility over the above thresholds. Also, all hazardous materials must be stored in a safe manner. Both the Release Response Plan and the Hazardous Materials Inventory must be supplied to the Certified Unified Program Agency (CUPA) for the program. In this case, the CUPA is the Santa Barbara County Fire Department (SBCFD).

Hazardous Waste Control Law (California Health and Safety Code, Chapter 6.5, and CCR Titles 22 and 26). This is the basic hazardous waste law for California. It establishes the criteria for defining hazardous waste, and its safe handling, storage, treatment, and disposal. The law is designed to provide cradle-to-grave management of hazardous wastes and reduce the occurrence and severity of hazardous materials releases. California regulates the management of hazardous wastes through the Health and Safety Code Chapter 6.5, Sections 25100, et seq., and through the CCR, Title 22, Division 4.5, Environmental Health Standards for the Management of Hazardous Wastes, as well as CCR Title 26, Toxics.

Aboveground Storage of Petroleum (California Health and Safety Code, Chapter 6.67). This State law regulates how aboveground petroleum storage tanks are to be constructed, installed, operated, and monitored. This law is designed to prevent the release of hazardous materials into the environment by either leakage from tanks and associated pipelines or from overfilling and spillage. As such, the program works to reduce the occurrence of hazardous materials releases.

Local

Santa Barbara County APCD Rule 325 – Crude Oil Production and Separation. This local regulation applies to equipment used in the production, gathering, storage, processing, and separation of crude oil and natural gas prior to custody transfer. This rule includes provisions for storage tanks, emissions control for produced gas, and requirements for recordkeeping, test methods, inspections, and compliance schedules.

UCSB – Long Range Development Plan (PRC § 30230.14). The 1990 UCSB Long Range Development Plan (LRDP) was established to identify the physical development necessary to achieve the Campus' academic goals and provide a land use plan to guide the development of future facilities. The LRDP is also intended to respond to the provisions of the California Coastal Act of 1976, with respect to the preparation of Long Range Development Plans for Campuses in the Coastal Zone. An amendment to the 1990 LRDP states that following the expiration of the Venoco lease in 2016, the University shall designate the site as open space or natural reserve area. Under the terms of the lease, Venoco is responsible for site cleanup upon expiration of the lease.

4.3.3 Significance Criteria

The significance criteria for this hazardous materials analysis were developed by considering study-area-specific potential impacts. A hazardous materials impact would be significant if it:

- Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; or
- Is located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and as a result would create a significant hazard to the public or the environment.

4.3.4 Impact Analysis and Mitigation

The proposed Project was evaluated for the presence of hazardous substances that, if present in large quantities in existing structures planned for construction/renovation, or known to exist in study area media (soil, sediment, groundwater, or surface water), could result in impacts to human health or the environment. A qualitative evaluation of potential impacts of the proposed Project was made based on the site-specific information obtained and described in Section 4.3.1, Environmental Setting. Impacts and related mitigation measures related to oil spills and subsequent cleanup activities are addressed in Sections 4.4, Hydrology, Water Resources and Water Quality, 4.5, Biological Resources, 4.1, Geological Resources, 4.2, Safety, and 4.12 Aesthetics/Visual Resources. Because impacts from oil spills are specific to the resource areas listed above, these impacts are not included in this section.

Impact HAZ-1: Exposure of Public or Environment to Hazardous Materials

The proposed Project would create a potential hazard to the public or the environment through the routine transport, use, or disposal of hazardous

materials during construction and/or project operation (Potentially Significant, Class II).

Impact Discussion

During the construction phase of the proposed Project, existing petroleum-contaminated soil or sediment could be encountered during soil disturbance activities, including trenching along the pipeline corridor and pile driving. Disturbance of existing contaminated soil or sediment could result in a release of hazardous materials, which could adversely affect human or ecological receptors. Several spills have been documented at the site during its 70-year history of oil production. In addition, during construction of recent improvements, soils contaminated with hydrocarbons were discovered beneath Pier 421-1 and removed from the site. Open excavations in contaminated areas can increase the potential for erosion, sedimentation, turbidity, and generation of contaminated water by (1) collection of storm water in the open area during storm events, or (2) groundwater influx in areas where the excavation intersects shallow groundwater. It appears that a Phase I Environmental Site Assessment (Phase I ESA) has not been prepared for the site, leaving the full scope of the potential occurrence hazardous materials unexplored.

The only trenching included as part of the proposed Project would be a shallow trench (30 inches deep by 12 inches wide) for the installation of electric cables. The proposed Project has planned for the electrical cable trenching activity to take one day. Additionally, the proposed Project has included a technique for upgrades to the existing 6-inch pipeline by in-situ enhancements including addition of a new internal coating of the pipeline. The pipeline would be accessed at the location near the 1994 oil release. Further project details are described in Section 2.2.3, Project Components.

During the construction phase, there is also a possibility that other pollutants typically associated with construction activities, such as sediment, concrete curing compounds, sealants, paints (among others) could be released. (The potential for and consequences of upset conditions during operations are addressed in Section 4.2, Safety.)

Mitigation Measures

Impacts from potential hazardous materials releases during both construction and operation of the proposed Project would be reduced if the following MMs are used:

1 **MM HAZ-1a. Proper Personnel Training.** Personnel working on the proposed
2 Project during the construction and operation phases shall be
3 adequately trained per the requirements included in several plan
4 documents that would also be required during construction or operation
5 of the facilities, including the EAP, Fire Prevention and Preparedness
6 Plan, and SPCC Plan. These plans include specific training
7 requirements such that personnel that have the potential to come into
8 contact with contaminated media and/or hazardous materials
9 understand safe work practices, BMPs, and waste management
10 practices, so that a release of hazardous materials can be avoided,
11 controlled, or minimized. In additional, Project construction and field
12 personnel shall be trained to identify possible indicators of a hazardous
13 release, such as hydrocarbon or solvent odors, stained soils, and oily
14 sheens on standing water.

15 **MM HAZ-1b. Conduct a Phase I ESA.** To gain a better understanding of the study
16 area and its potential to have additional, previously unknown releases of
17 hazardous materials or other environmental concerns, Venoco shall
18 perform a Phase I ESA on the study area prior to construction of the
19 proposed Project and provide this study to CSLC, the city of Goleta, and
20 Santa Barbara County. The Phase I ESA will determine the likelihood of
21 site contamination and whether subsequent investigations are necessary
22 to quantify and remediate any existing contamination. Conclusions of
23 the Phase I ESA, including recommendation of a Phase II and
24 subsequent investigation, shall be followed.

25 **MM HAZ-1c. Sediment Sampling.** Prior to construction activities, sediments within
26 the construction areas and underlying soil shall be sampled to
27 determine if sediment contains total petroleum hydrocarbons or other
28 contaminants at concentrations above regulatory thresholds. If
29 contamination is determined to be present, the following MM HAZ-1d
30 and MM WQ-1a Silt Curtain discussed in Section 4.5 Hydrology, Water
31 Resources, and Water Quality shall be implemented.

32 **MM HAZ-1d. Removal Action Plan.** If sediment within the construction areas and
33 surrounding soil is determined to contain total petroleum hydrocarbons
34 or other contaminants above the California Ocean Plan thresholds and if
35 such sediments may be exposed, prior to commencing construction
36 activities, Venoco shall prepare a Removal Action Plan for the safe
37 removal of contaminated materials from the structures and surrounding
38 area. The action plan shall be circulated to all interested agencies for
39 review and comment. Final approval of the plan shall be under the
40 purview of the CDFG Office of Spill Prevention and Response. Upon
41 approval, sediments shall be removed from construction areas and
42 disposed of in accordance with procedures described in the Removal
43 Action Plan. However, if it is determined that removal of contaminated
44 sediments would impair the integrity of the pier (either through complete

removal of the soil filling the caisson or having to dig underneath), Venoco shall prepare an approved Decommissioning Plan to remove the remaining contaminated sediments at such time that the piers are decommissioned.

Rationale for Mitigation

Based on past operations, the potential exists for contaminated media to exist within the proposed construction areas. Therefore, pre-Project planning, contingency planning, and personnel training would be needed to control, prevent, or eliminate future releases of hazardous materials during implementation of the proposed Project. Proper personnel training will ensure that Project personnel are prepared for emergency response in the event of a release of hazardous materials, and will be trained in the proper handling and disposal of such materials. The purpose of a Phase I ESA is to identify environmental concerns that may be associated with a property. Identification of such concerns helps to evaluate the nature, extent, and magnitude of potential contamination at a site, and to identify what media (e.g., soil, sediment, groundwater, or surface water) may have been contaminated. The conclusions of the Phase I may include recommendation of subsequent investigation (Phase II), in which the extent and nature of contamination will be identified. Sampling of sediment in the proposed construction areas will determine whether contamination is present prior to ground disturbance activities. If it is determined that contamination is present, a Removal Action Plan will define requirements for proper cleanup and disposal, thereby minimizing risk to the public and environment.

Impact HAZ-2: Release of Contaminated Sediment from Caissons

Contaminated sediment contained within the caisson structures could infiltrate to the surrounding environment (Potentially Significant, Class II).

Exposure of caisson sediment through opening of the caisson structure during construction is not intended as part of the proposed Project. However, the proposed Project will extend the use of the aging caisson structures. The caisson walls are subject to weathering, corrosion, and fatigue (see Impact GEO-4) and the potential exists for contaminated sediment contained within the caissons to infiltrate to the surrounding environment. Potential mechanisms and pathways for release of contamination from the caissons are not fully understood; however, potential pathways may include percolation from water infiltration and leakage through the sides and bottom of the caisson wall. The potential for collapse of the caisson structures is discussed in Section 4.2, Safety (see Impact S-2).

Mitigation Measures

Mitigation measures listed in Sections 4.1, Geological Resources, and 4.2, Safety, would reduce the potential for contamination to leak or infiltrate from the caisson structures. In particular, MM GEO-4a, Corrosion Protection Design Specification, MM GEO-4d, Inspect Structures During and/or After Storm Events, and MM S-2b, Caisson Improvements, shall be employed to ensure the integrity of the structures. Results from the Phase I and likely subsequent Phase II ESAs described in MM HAZ-1b would provide information on the nature and extent of any pre-existing contamination from past site operations.

Rationale for Mitigation

Contaminated sediment is contained within the caisson structures, which are aged and subject to erosion. Although exposure of caisson sediments is not proposed, the potential exists for contamination to leak or infiltrate from the caissons. Mitigation measures discussed above will identify environmental concerns associated with existing contamination in the Project area and will ensure the integrity of the caisson structures, thereby decreasing the potential for a release of contaminated sediment. Mitigation measures MM GEO-4a, Corrosion Protection Design Specification, and MM S-2b, Caisson Improvements, will ensure the structural integrity of the caissons through design specification and repair. Inspections of the caisson structures, as discussed in MM GEO-4d, Inspect Structures During and/or After Storm Events, will lessen the potential for release of caisson media through cracks in the structure. Information obtained from implementation of MM HAZ-1b would provide data for evaluating the potential for pre-existing contamination to infiltrate to the surrounding environment.

Impacts Related to Future Transportation Options

For the purposes of this impacts analysis, it is assumed that Line 96 and the EMT would be used to transport crude oil recovered from PRC 421 using the barge Jovalan to ship the oil to a Los Angeles or San Francisco Bay area refinery through approximately the year 2013. However, as discussed earlier in this EIR (Sections 1.2.4, 2.4.2, and 3.3.6), several options exist for future transportation of oil from the Project. These include ongoing use of the EMT through 2013, use of a pipeline to Las Flores Canyon, and trucking of oil to Venoco's ROSF Facility 35 miles to the south and subsequent transport to Los Angeles via pipeline. The potential hazardous materials impacts from transportation using the existing EMT system are fully described above (see Impact HAZ-1).

The timing and exact mode of transportation of produced oil after the initial five years of Project operation are speculative at this point in time. If neither of these options is permitted or available by the cessation of operation of the EMT, production from PRC 421 would be stranded, at least temporarily, until an alternative transportation mode is approved and becomes available.

Neither transportation option is anticipated to create impacts to hazardous materials, as ground disturbance of potentially contaminated materials and construction using hazardous materials is not proposed under either option.

Table 4.3-2. Summary of Hazardous Materials Impacts and Mitigation Measures

Impact	Mitigation Measures
HAZ-1: Exposure of Public or Environment to Hazardous Materials	HAZ-1a. Proper Personnel Training. HAZ-1b. Conduct Phase I ESA. HAZ-1c. Sediment Sampling. HAZ-1d. Removal Action Plan. WQ-1a. Silt Curtain.
HAZ-2: Release of Contaminated Sediment from Caissons	GEO-4a. Corrosion Protection Design Specification. S-2b. Caisson Improvements. GEO-4d. Inspect Structures During and/or After Storm Events. HAZ-1b. Conduct Phase I ESA.

4.3.5 Impacts of Alternatives

Alternatives are discussed in detail in Section 3.0, Alternatives and Cumulative Projects. Impacts associated with each of the alternatives are addressed below.

No Project Alternative

Under this Alternative, there would be no production at PRC 421, and the facilities would be decommissioned under an accelerated schedule. The No Project Alternative would avoid the potential for contaminated sediment to be encountered during construction activities. The potential effects of decommissioning the facilities would be evaluated in a separate analysis. Until PRC 421 is fully abandoned, potentially significant impacts could occur through the partial collapse of portions or all of either of the caissons or damage to the seawall (see Section 4.2.5, Safety). Such a collapse and the subsequent release of contaminated sediment would result in impacts similar to those described for the proposed Project (see impacts HAZ-1 and HAZ-2).

The decommissioning of PRC 421 would include eventual site investigation and remediation. However, until decommissioning is complete, impact HAZ-2 would remain.

No Project Alternative with Pressure Testing

Under this Alternative, pressure testing of the Vaqueros Reservoir would be conducted as required by CSLC. No pile-driving, trenching or repairs to caissons would occur. Any oil, gas, or water produced during pressure testing would be separated and processed at the EOF. The pressure testing would involve producing a pre-determined amount of oil from PRC 421 for 6 to 12 months. Impacts associated with this Alternative would be less than those of the proposed Project. However, until such as time as full abandonment occurs or until repairs such as those associated with the proposed Project are implemented, the potential would remain for Impact HAZ-2 to occur. Therefore, Mitigation measures listed in Sections 4.1, Geological Resources, and 4.2, Safety, would be required to reduce the potential for contamination associated with caisson or seawall damage to occur.

Onshore Oil Separation at the EOF

Under this Alternative, Pier 421-2 would be put into production, the associated additions to the existing 6-inch pipeline would be completed, and the electrical cables would be installed via trenching; however, the separation of oil, gas, and water would occur at the EOF. These activities have the potential to expose the environment and the public to hazardous materials existing in the sediment, within the caisson at Pier 421-2, and being used at the site; therefore, impacts would remain as described for the proposed Project and MMs HAZ-1a through HAZ-1d, WQ-1a, GEO-4a, S-2b, and GEO-4d would apply.

Pier 421-1 would not be required for water re-injection and the decommissioning of Pier 421-1 would be accelerated. The accelerated decommissioning would require submittal of a decommissioning plan for Pier 421-1 to the CSLC and the city of Goleta within approximately 6 months of approval of this alternative. The decommissioning plan would be subject to further environmental review.

Recommissioning Using Historic Production Methods

Under this Alternative, production would resume at PRC 421 essentially in its historical configuration at the time prior to the wells being shut-in in 1994 while incorporating new technologies to comply with current industrial and environmental standards. The historical configuration included production of oil and water emulsion at Well 421-2,

1 routing of the produced oil and water through an underground pipe from 421-2 to 421-1,
2 separation of the oil and water emulsion at Pier 421-1, routing of the produced oil
3 through the existing underground 6-inch pipe (which connects to Line 96), and
4 temporary storage of the water emulsion in a holding tank on Pier 421-1. The water in
5 the holding tank would then periodically be re-injected through Well 421-1. Most of the
6 repairs and construction activities in the proposed Project, including installation of the
7 buried power cable and installation of new 2-inch piping inside the existing 6-inch
8 piping, would also be conducted as part of this alternative. Therefore, there is still the
9 potential for a release of hazardous materials as anticipated under the proposed
10 Project, and MMs HAZ-1a through HAZ-1d, WQ-1a, GEO-4a, S-2b, and GEO-4d would
11 apply.

12 Re-injection at Platform Holly

13 Under this Alternative, production would resume at PRC 421 as described under the
14 proposed Project; however, water would be sent to Platform Holly, via the EOF, for re-
15 injection as described in the Project description. Pier 421-1 would not be required for
16 water re-injection and the decommissioning of Pier 421-1 would therefore be
17 accelerated. The accelerated decommissioning would require submittal of a
18 decommissioning plan for Pier 421-1 to the CSLC and the city of Goleta within
19 approximately 6 months of approval of this alternative, and would be subject to further
20 environmental review. As described in Section 3.3.5, Re-injection of Platform Holly, this
21 Alternative would require alterations to Platform Holly and use of an existing sub-sea
22 utility pipeline from the EOF to Platform Holly. Because this Alternative would include
23 all facility improvements anticipated under the proposed Project, the same potential for
24 release of hazardous materials exists; therefore, MMs HAZ-1a through HAZ-1d, WQ-1a,
25 GEO-4a, S-2b, and GEO-4d would apply.

26 Transportation Sub-Alternative Options

27 *Pipeline Sub-Alternative*

28 This method of crude oil transportation would involve the construction of an onshore 6-
29 inch-diameter crude-oil pipeline from the EOF to the AAPL at Las Flores Canyon.

30 **Impact HAZ-3: Release of Hazardous Materials during Pipeline Construction**

31 **The proposed Project would create a potential hazard to the public or the**
32 **environment through the routine transport, use, or disposal of hazardous**

materials during pipeline construction and/or operation (Potentially Significant, Class II).

Impact Discussion

Potential release of hazardous materials (fuel, lubricants, etc) is addressed in Section 4.7, Terrestrial Biological Resources, under Impact TBIO-4. Mitigation measures associated with this impact would apply.

Trucking Sub-Alternative

Under the truck transportation option, crude produced from the proposed Project would be transported by truck from the EOF to the ROSF, located just east of Carpinteria. Risks from loading and unloading operations at the EOF and at the ROSF are addressed in Section 4.2, Safety. Loading/unloading operations would take place in areas with designed secondary containment to manage hazardous materials on the facility site. The truck transportation option is not expected to have any impact on hazardous materials.

4.3.6 Cumulative Projects Impact Analysis

Given that MMs are used to control, prevent, or eliminate the release of hazardous materials at the study area, implementation of the proposed Project is not anticipated to add to the cumulative effects of implementation of other projects in the area. In addition, the proposed Project and other nearby projects where the use, handling, or disposal of hazardous materials is anticipated are all subject to regulatory standards that must be achieved during construction and operation. Similar to the proposed Project, all future projects in the area would be evaluated on a project-by-project basis and would incorporate measures to reduce any potential impacts from releases of hazardous materials. Mitigation for future projects would be expected to be consistent with applicable standards, regulations, and permits to reduce any potential impacts from releases of hazardous materials. Incorporation of these requirements in other projects would be expected to reduce impacts to less than significant levels. Therefore, the proposed Project is not anticipated to make a contribution to cumulative impacts from the release of hazardous materials. It should be noted that cumulative impacts from a potential future oil spill could be anticipated; such impacts are addressed in Section 4.5, Hydrology, Water Resource, and Water Quality, and Section 4.2, Safety.